(2721)

NORTH COUNTRY ENVIRONMENTAL SERVICES

October 13, 2000

Mr. Chuck Schwer
VTDEC
Waste Management Division
103 South Main Street/West Office
Waterbury, VT 05671-0404

OCT 19 10 06 AM '00
WASTE MANAGEMENT DIVISION

Re: Site Investigation at Craftsbury Center, Inc.
Lost Nation Road, Craftsbury Common, Vermont
SMS Site # 99-2721

Dear Mr. Schwer:

Enclosed please find one copy of the Site Investigation Report for the referenced property. This investigation was requested in your letter dated January 21, 2000.

If you have any questions regarding this report, please contact me at the letterhead address.

Sincerely,

Keri S. Seitz

Keri S. Seitz
Project Manager

Cc: Russ Spring, Craftsbury Center, Inc.

Corporate Office: 31 Granite Street · Suite 8 • Milford, MA 01757 • (508) 634-9800 • Fax (508) 634-8259
Cape Cod & Islands Office: 147 State Road (Rte. 3A) • Sagamore Beach, MA 02532 • (508) 888-8080 • Fax (508) 634-8259
Vermont Office: 11 Mill Street • Barre, VT 05641 • (802) 479-5299 • Fax (802) 479-5499
Connecticut Office: • 461 Cooke Street • Farmington, CT 06032 • (860) 409-9033 • Fax (860) 409-9044

Phase (check one)	Type (check one)
X Initial Site Investigation	Work Scope
Corrective Action Feasibility Investigation	X Technical Report
Corrective Action Plan	PCF Reimbursement Request
Corrective Action Summary Report	General Correspondence

INITIAL SITE INVESTIGATION

Craftsbury Center, Inc.
Lost Nation Road
Craftsbury Common, VT 05827
SMS Site # 99-2721

Prepared For:

Craftsbury Center, Inc.
Lost Nation Road
Craftsbury Common, VT 05827

Prepared By:

North Country Environmental Services, Inc.
31 Granite Street, Suite 8
Milford, MA 01757

NCES Job # 2878

Contact: Keri S. Seitz

October, 2000

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Appendices

Appendix A Site Maps

Appendix B Soil Boring Logs

Appendix C Laboratory Reports

1.0 EXECUTIVE SUMMARY

Two underground storage tanks (UST) were closed at the subject site on November 8, 1999. The UST were not removed and assessed in accordance with guidelines established by the Vermont Department of Environmental Conservation (VTDEC) and applicable federal regulations. At the request of Mr. Andrew Shively of the Vermont UST Program, a test pit was excavated for assessment.

On November 10, 1999 representatives of NCES were on site to assess the location where two 5,000 gallon UST had previously been removed. Soils excavated from the area exhibited a moderate petroleum odor and soils screened with a calibrated HNu photoionization detector (PID) recorded readings of 28 to 100 ppm. Based on the findings of the UST Closure Assessment, NCES recommended that further site investigations be performed regarding the site in association with the USTs. VTDEC requested addition site work be completed in a letter dated January 21, 2000.

The additional site investigation was to consist of the installation of 4 soil borings to be completed as monitoring wells, with both soil screening and groundwater samples to be collected for analysis. In addition, potential receptors surrounding the site were to be inspected for impact. Site soil conditions prevented the installation of all four wells, and only two were installed. Groundwater samples collected from both wells showed that no volatile organic compounds were detected. TPH was detected in the sample collected from MW-1 at a concentration of 1.24 ppm.

After discussion with Chuck Schwer of VTDEC, it was determined that further investigation was not warranted, and that the investigation performed to date would be sufficient to characterize the site impact.

Based on the groundwater analytical results, and the soil screening completed in the field, NCES believes that no further action is warranted at this site and that the site be considered for closure.

2.0 INTRODUCTION

The purpose of this report is to outline the results of initial site investigative activities at the Craftsbury Center, Inc. in Craftsbury Common, Vermont (the Site). The site investigative activities were performed on behalf of Russ Spring of Craftsbury Center, Inc., under the direction of the Sites Management Section of the Vermont Department of Environmental Conservation.

3.0 SCOPE OF WORK PERFORMED

Three soil borings were installed to determine site soil characteristics and to interpret the upper groundwater table. The fourth boring was not attempted or completed due to the difficult soil conditions encountered on site. Soil was screened at five-foot intervals with a properly calibrated PID at each location. All borings were advanced utilizing a truck-mounted hydraulic rotary drill rig, utilizing continuous flight 4.25 inch ID hollow stem augers. The borings were

advanced in the overburden soils and refusal was encountered at the first two locations at 10 feet below ground surface. Several attempts were made to offset the wells, but no change in subsurface conditions was encountered. These two borings were completed as groundwater monitoring wells. A third boring was attempted, however refusal was encountered at between 4 and 6 feet below ground surface. Water was not encountered; thus a well was not installed in this location. A site map, which shows the boring locations, is included in Appendix A. Copies of the boring logs are included in Appendix B.

The monitoring wells were constructed of 2-inch ID schedule 40 PVC pipe with flush threads and end caps. The screen sections of each well were constructed of .010-inch slotted, 2-inch ID schedule 40 PVC pipe with flush threads. The well screen in each well was installed to intercept the elevation of the upper level groundwater. The annular space was filled with washed silica sand to a level approximately two feet above the well screen following placement of the riser pipe and screen section of each well. A two-foot bentonite seal was then installed above the sand pack. The remainder of the annular space was then filled with natural materials. Watertight roadway boxes were placed at grade and sealed with concrete to complete installation.

Groundwater monitoring was conducted at the two well locations to delineate any dissolved contamination plume resulting from the two UST closed at the site. A minimum of three (3) well volumes of groundwater was removed from each well with a disposable bailer. Each well was then allowed to recharge prior to sample collection. The locations of the monitoring wells are outlined on the Site Plans in Appendix A of this report. All groundwater samples collected from the site were properly packaged and preserved pending delivery to a certified laboratory for analysis under a signed chain of custody.

In addition, locations of private wells were confirmed and the nearby pond was inspected for petroleum impacts. All site activities were performed as outlined in the Site Investigation Guidance published by the VTDEC.

4.0 INVESTIGATION RESULTS

Soils from all of the completed and attempted borings were screened for Total Organic Vapors (TOV) with a PID. None of the soils displayed TOV content (>0ppm) when screened. Basements and/or first floors of nearby buildings showed no TOV content and the nearby pond did not show any signs of petroleum impact. Groundwater samples were collected from the two completed wells and analyzed for volatile organic compounds (VOC) by EPA method 8021B and total petroleum hydrocarbons (TPH) by EPA method 8100. No VOC were detected in either well. TPH was detected in MW-1 at a concentration of 1.24ppm. A copy of the laboratory results is attached in Appendix C.

5.0 SITE HYDROGEOLOGY

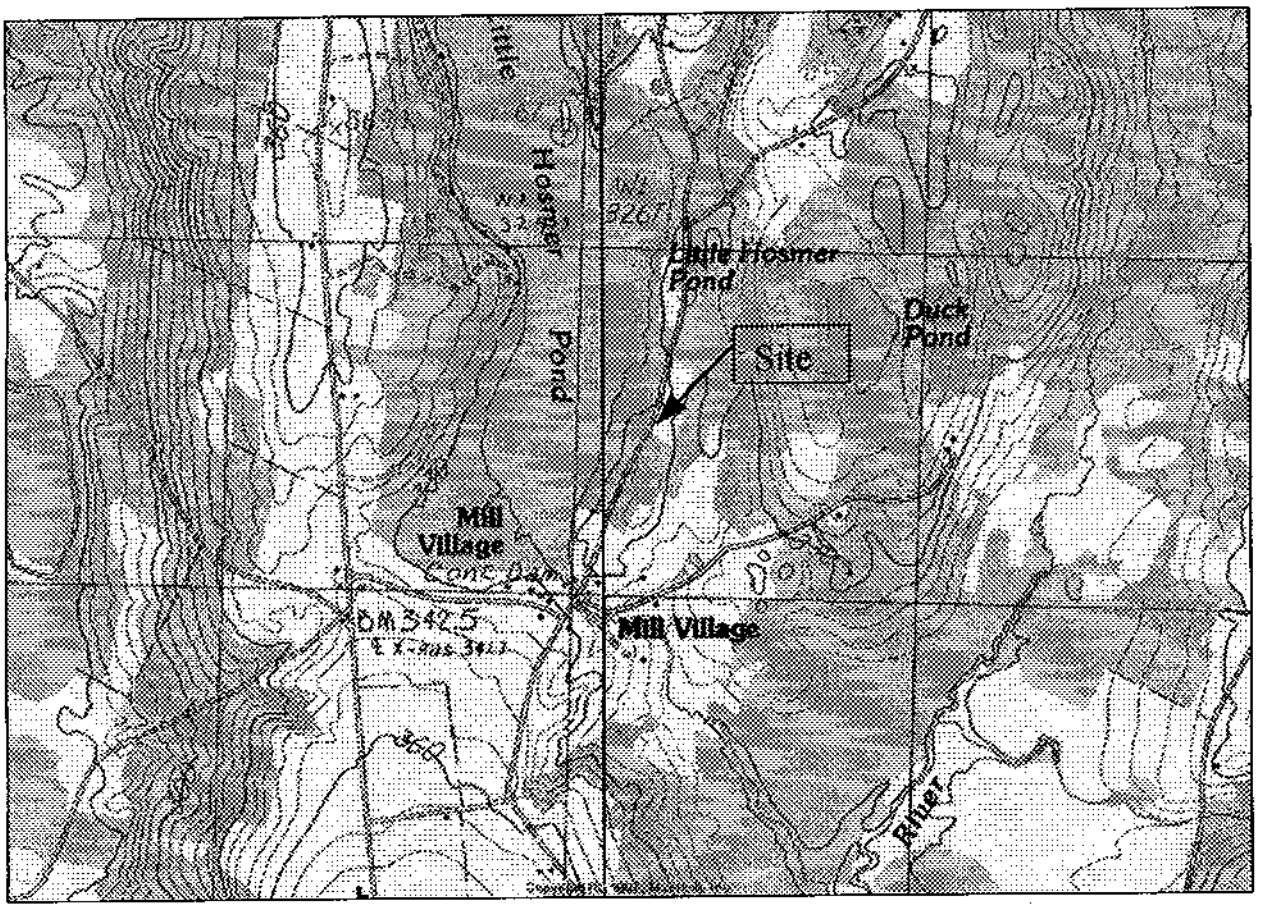
MW-1 is located in the former tank excavation at the site, and MW-2 is most likely cross-gradient based on the local surface waters. Groundwater flow directions could not be determined from only two wells, but based on local topography, groundwater is anticipated to flow in a northwest direction.

6.0 CONCLUSIONS & RECOMMENDATIONS

Petroleum contamination was suspected based on field screening of soil following removal of two USTs. Two groundwater monitoring wells were installed and sampled for VOC and TPH. Only TPH was detected (1.24ppm) in the sample collected from MW-1, located within the former tank excavation. No evidence of further soil contamination was detected.

Based on concerns expressed by VTDEC, ambient air screenings were conducted in adjacent buildings. No evidence of vapor migration was detected in any nearby buildings.

Based on the findings at the site NCES recommends no further action at this site and that the site be considered for closure.



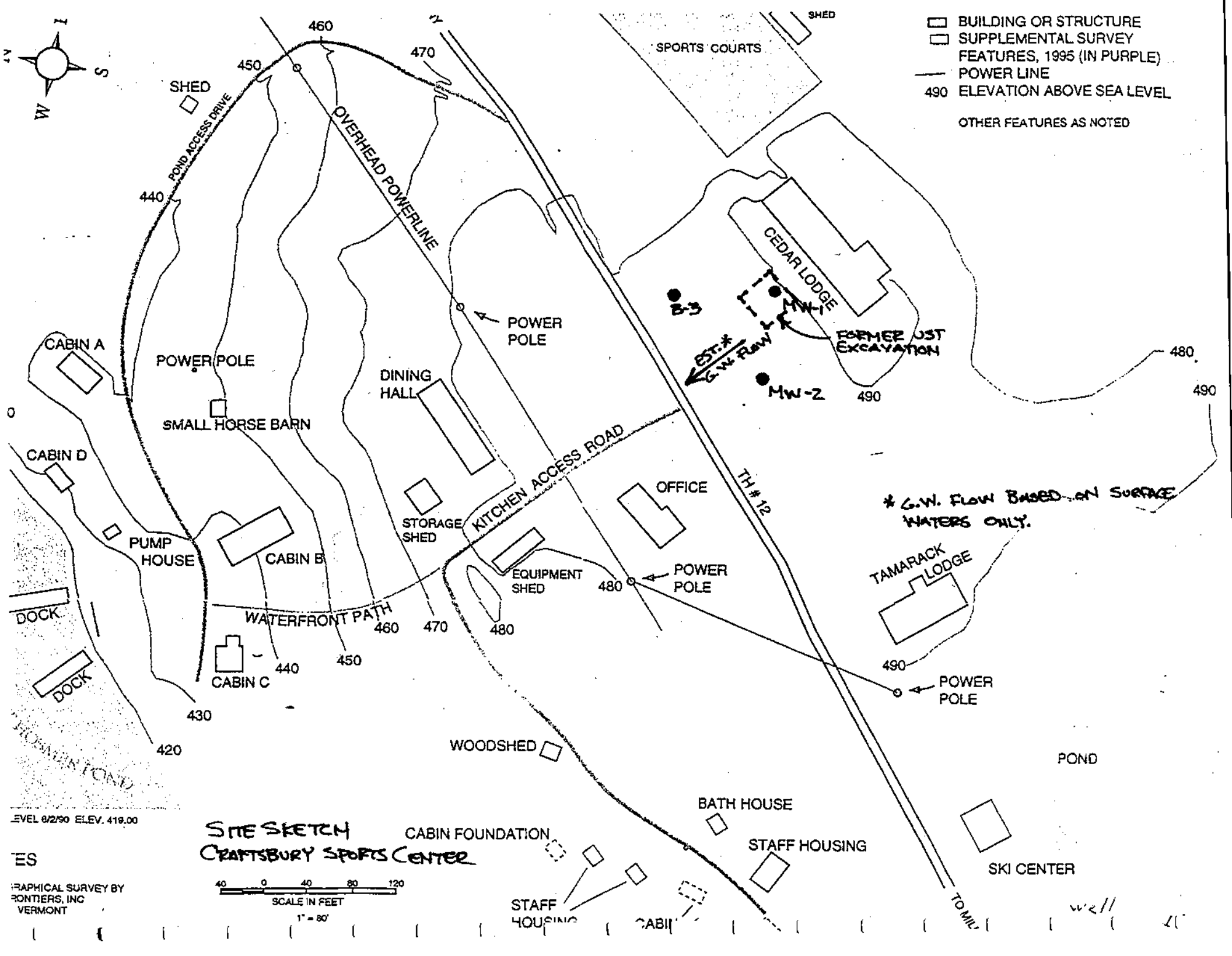
North

Craftsbury Center, Inc.
Lost Nation Road
Craftsbury Common, Vermont
SMS Site #99-2721

Site Location Map
Approx. Scale 1:24,000

NORTH COUNTRY ENVIRONMENTAL SERVICES

Map excerpted from USGS map for Craftsbury, Vermont


BUILDING OR STRUCTURE
SUPPLEMENTAL SURVEY FEATURES, 1995 (IN PURPLE)
POWER LINE
490 ELEVATION ABOVE SEA LEVEL
OTHER FEATURES AS NOTED
SHED
SPORTS COURTS
POND ACCESS DRIVE
OVERHEAD POWERLINE
460
450
470
440
CEDAR LODGE
B-3
MW-1
FORMER UST EXCAVATION
EST.* G.W. FLOW
MW-2
490
480
POWER POLE
CABIN A
POWER POLE
DINING HALL
SMALL HORSE BARN
CABIN D
KITCHEN ACCESS ROAD
OFFICE
TH # 12
* G.W. FLOW BASED ON SURFACE WATERS ONLY.
STORAGE SHED
PUMP HOUSE
CABIN B
EQUIPMENT SHED
TAMARACK LODGE
DOCK
WATERFRONT PATH
CABIN C
DOCK
430
420
WOODSHED
POND
BATH HOUSE
STAFF HOUSING
SKI CENTER
CABIN FOUNDATION
STAFF HOUSING
TO MIL
SITE SKETCH
CRAFTSBURY SPORTS CENTER
40 0 40 80 120
SCALE IN FEET
1" = 80'
LEVEL 6/2/90 ELEV. 419.00
ES
RAPHICAL SURVEY BY
RONTIERS, INC
VERMONT

GREEN MOUNTAIN BORING

PO Box 218 ° East Barre, Vermont 05649 ° 802 476-5073

TO:	North Country Environmental ATTN: Peter Aldrich 31 Granite Street, Suite 8 Milford, MA 01757	PROJECT NAME: LOCATION: GMB JOB #:	Craftsbury Sports Center Craftsbury, Vermont 00025	SHEET: DATE: HOLE #: LINE & STA. OFFSET:	1 3/20/00 MW-1

Ground Water Observations 6' at ½ hour	Augers-Size I.D. Split Spoon Hammer Wt. Hammer Fall	4.25" 1 3/8" 140# 30"	Surface Elevation: Date Started: Date Completed: Boring Foreman: Inspector: Soils Engineer:	 3/20/00 3/20/00 Ronald Garneau Peter Aldrich

LOCATION OF BORING: As directed by North Country Environmental

Sample Depths From/To (Feet)	Type of Sample	Blows per 6" on Sampler	Moisture Density or Consist.	Strata Change Elev.	Soil Identification	Sample No.	Sample Pen. Inches	Sample Rec. Inches
5-7	Dry	4/2/2/2	Wet		Fine brown sand, some silt and small stones	1	24	13
10-12	Dry	105 for 6"	Wet		Shaley weathered bedrock	2	6	6
					Auger Refusal at 12.5'. Set Well. <u>Materials Used:</u> 8.5' of 2" pvc .010 Screen 2' of 2" Riser 2 Bags of #1 Filter Sand 1 Top Wingnut Cap 1 Bottom Slip Cap ½ Bag of Hole Plug 1 Road Box 1 Bag of Cement			

SUMMARY: HOLE #MW-1

Used 4.25" augers, then Split Spoon to 12.5' and Installed Well

Ground Surface to	12.5'
Earth Boring	12.5'
Rock Coring	
Samples:	2

GREEN MOUNTAIN BORING

PO Box 218 ° East Barre, Vermont 05649 ° 802 476-5073

TO:	North Country Environmental ATTN: Peter Aldrich 31 Granite Street, Suite 8 Milford, MA 01757	PROJECT NAME: LOCATION: GMB JOB #:	Craftsbury Sports Center Craftsbury, Vermont 00025	SHEET: DATE: HOLE #: LINE & STA. OFFSET:	2 3/20/00 MW-2

Ground Water Observations 6' at ½ hour	Augers-Size I.D. Split Spoon Hammer Wt. Hammer Fall	4.25" 1 3/8" 140# 30"	Surface Elevation: Date Started: Date Completed: Boring Foreman: Inspector: Soils Engineer:	 3/20/00 3/20/00 Ronald Garneau Peter Aldrich

LOCATION OF BORING: As directed by North Country Environmental

Sample Depths From/To (Feet)	Type of Sample	Blows per 6" on Sampler	Moisture Density or Consist.	Strata Change Elev.	Soil Identification	Sample No.	Sample Pen. Inches	Sample Rec. Inches
5-7	Dry	12/2/2/2	Damp/Wet		Brown silty sand, into a very fine brown sand with some silt	1	24	19
8-10	Dry	100 for ½"			No Recovery. Pulled Auger and Offset 5'.			
					Auger Refusal at 8.5'. Set Well. <u>Materials Used:</u> 5' of 2" pvc .010 Screen 3' of 2" Riser 2 Bags of #1 Filter Sand 1 Top Wingnut Cap 1 Bottom Slip Cap ½ Bag of Hole Plug 1 Road Box 1 Bag of Cement			

SUMMARY: HOLE #MW-2

Used 4.25" augers, then Split Spoon to 8.5' and Installed Well

Ground Surface to	8.5'
Earth Boring	8.5'
Rock Coring	
Samples:	1

GREEN MOUNTAIN BORING

PO Box 218 ° East Barre, Vermont 05649 ° 802 476-5073

TO:	North Country Environmental ATTN: Peter Aldrich 31 Granite Street, Suite 8 Milford, MA 01757	PROJECT NAME: LOCATION: GMB JOB #:	Craftsbury Sports Center Craftsbury, Vermont 00025	SHEET: DATE: HOLE #: LINE & STA. OFFSET:	3 3/20/00 MW-3

Ground Water Observations None at 0 hours	Augers-Size I.D. Split Spoon Hammer Wt. Hammer Fall	4.25" 1 3/8" 140# 30"	Surface Elevation: Date Started: Date Completed: Boring Foreman: Inspector: Soils Engineer:	 3/20/00 3/20/00 Ronald Garneau Peter Aldrich

LOCATION OF BORING: As directed by North Country Environmental

Sample Depths From/To (Feet)	Type of Sample	Blows per 6" on Sampler	Moisture Density or Consist.	Strata Change Elev.	Soil Identification	Sample No.	Sample Pen. Inches	Sample Rec. Inches
					Auger Refusal at 3'. Offset 5' East			
					Auger Refusal at 3'. Offset 15' West			
					Auger Refusal at 3'. End of Boring due to Rock. No Well Installed.			

SUMMARY: HOLE #MW-3

Used 4.25" augers, hit refusal at 3' on three attempts

Ground Surface to	3'
Earth Boring	3'
Rock Coring	
Samples:	0

GeoLabs, Inc.

Environmental Laboratories

PREPARED FOR:

North Country Environmental Services, Inc.
31 Granite Street
Suite 8
Milford, MA 01757

Attn: Robert Berger

PROJECT ID:	NCES Job #2878 Craftsbury, VT
GEOLABS CERTIFICATION #:	MA-015
SAMPLE NUMBER:	92579-92580
DATE PREPARED:	April 10, 2000
PREPARED BY:	Christine Johnson
APPROVED BY:	Jim Chen, Laboratory Director/Date

Location: 10 Plain Street
Braintree, MA 02184

Phone: (781) 848-7844
Fax: (781) 848-7811

CLIENT NAME:	**NORTH COUNTRY ENV.**	PROJECT ID:	NCES JOB #2878
SAMPLE TYPE:	GROUND WATER	REPORT DATE:	04/10/00
COLLECTION DATE:	03/30/00	ANALYZED BY:	YL 04/06/00
REC'D BY LAB:	04/03/00	EXTRACTION DATE:	N/A
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE ORGANICS

SAMPLE NUMBER:	92579	92580
SAMPLE LOCATION:	MW-1	MW-2

	RESULTS (µg/L)		DETECTION LIMIT (µg/L)
Benzene	ND	ND	5.0
Bromobenzene	ND	ND	5.0
Bromochloromethane	ND	ND	2.0
Bromoform	ND	ND	5.0
Bromomethane	ND	ND	5.0
n-butylbenzene	ND	ND	5.0
Carbon tetrachloride	ND	ND	5.0
Chlorobenzene	ND	ND	5.0
Chloroethane	ND	ND	5.0
Chloroform	ND	ND	5.0
Chloromethane	ND	ND	5.0
2-Chlorotoluene	ND	ND	5.0
4-Chlorotoluene	ND	ND	5.0
Dibromomethane	ND	ND	5.0
Dibromochloromethane	ND	ND	5.0
Dichlorobromomethane	ND	ND	5.0
Dichlorodifluoromethane	ND	ND	5.0
1,1-Dichloroethane	ND	ND	5.0
1,1-Dichloroethene	ND	ND	0.96
1,1-Dichloropropene	ND	ND	5.0
1,2-Dibromoethane	ND	ND	5.0
1,2-Dibromo-3-chloropropane	ND	ND	5.0
1,2-Dichlorobenzene	ND	ND	5.0
1,2-Dichloroethane	ND	ND	5.0
1,2-Dichloropropane	ND	ND	5.0
1,3-Dichlorobenzene	ND	ND	5.0
1,3-Dichloropropane	ND	ND	5.0
1,4-Dichlorobenzene	ND	ND	5.0
2,2-Dichloropropane	ND	ND	5.0
c-1,2-Dichloroethene	ND	ND	5.0
c-1,3-Dichloropropene	ND	ND	5.0
t-1,2-Dichloroethene	ND	ND	5.0

CLIENT NAME:	**NORTH COUNTRY ENV.**	PROJECT ID:	NCES JOB #2878
SAMPLE TYPE:	GROUND WATER	REPORT DATE:	04/10/00
COLLECTION DATE:	03/30/00	ANALYZED BY:	YL 04/06/00
REC'D BY LAB:	04/03/00	EXTRACTION DATE:	N/A
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE ORGANICS

SAMPLE NUMBER:	92579	92580	
SAMPLE LOCATION:	MW-1	MW-2	
	RESULTS (µg/L)		**DETECTION LIMIT (µg/L)**
t-1,3-Dichloropropene	ND	ND	5.0
Ethylbenzene	ND	ND	5.0
Hexachlorobutadiene	ND	ND	0.19
Isopropylbenzene	ND	ND	5.0
p-Isopropyltoluene	ND	ND	5.0
Methylene Chloride	ND	ND	10.0
Naphthalene	ND	ND	25.0
n-propylbenzene	ND	ND	5.0
Sec-butylbenzene	ND	ND	5.0
Styrene	ND	ND	5.0
tert-butylbenzene	ND	ND	5.0
Tetrachloroethene	ND	ND	5.0
Toluene	ND	ND	5.0
Trichloroethene	ND	ND	5.0
Trichlorofluoromethane	ND	ND	5.0
1,1,1-Trichloroethane	ND	ND	5.0
1,1,2-Trichloroethane	ND	ND	5.0
1,1,2,2-Tetrachloroethane	ND	ND	5.0
1,1,1,2-Tetrachloroethane	ND	ND	5.0
1,2,3-Trichloropropane	ND	ND	5.0
1,2,3-Trichlorobenzene	ND	ND	5.0
1,2,4-Trichlorobenzene	ND	ND	5.0
1,2,4-Trimethylbenzene	ND	ND	5.0
1,3,5-Trimethylbenzene	ND	ND	5.0
Vinyl Chloride	ND	ND	2.0
Xylenes	ND	ND	5.0

ND = NOT DETECTED

Method Reference:

EPA Method 8260B (1) GC/MS

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1996, 3rd Edition.

CLIENT NAME:	**NORTH COUNTRY ENV.**	PROJECT ID:	NCES JOB #2878
SAMPLE TYPE:	GROUND WATER	REPORT DATE:	04/10/00
COLLECTION DATE:	03/30/00	ANALYZED BY:	AS/DW 04/07/00
REC'D BY LAB:	04/03/00	EXTRACTION DATE:	04/06/00
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	SULFURIC ACID		

TOTAL PETROLEUM HYDROCARBONS

SAMPLE NUMBER	SAMPLE LOCATION	TPH (mg/L)	DETECTION LIMIT (mg/L)
92579	MW-1	**1.24**	0.20
92580	MW-2	ND	0.20

ND = NOT DETECTED

Method Reference:

EPA Method 8100 (1) Modified

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1986, 3rd Edition.

GEOLABS, INC.
10 PLAIN STREET
BRAINTREE, MA 02184
MA-015

LIMITATIONS & EXCLUSIONS

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

GeoLabs, Inc.
Environmental Laboratories
10 Plain Street
Braintree, MA 02184
Office: 781-848-7844
Fax: 781-848-7811

Turnaround Time
RUSH: 24hrs ☐ 48hrs ☐ 72hrs ☐ STANDARD ☒ 5 Days Rush
Approved By:

Page 1 of 1

SPECIAL INSTRUCTIONS

→ Per Kerry Burke run TPH 8100 & 8021B. SW 4/5 14:30 Client aware of VT certification issues).

Client: NCES
Address: 31 GRANITE ST MILFORD MA
Phone: 508-634-9800
Fax: 508-634-8259
Contact: P. ALDRICH

Project Number: 2818
Project Location: CRAFTSBURY, VT
Purchase Order #: 00-357
Collected By: P.B. ALDRICH

ANALYSES REQUESTED

SAMPLE ID	COLLECTION DATE	COLLECTION TIME	SAMPLE LOCATION	CONTAINER TYPE	CONTAINER QUANT	MATRIX	COMP	GRAB	PRES	GEOLABS SAMPLE NUMBER	8021B (8020)	TPH 8015								LAB pH
MW-1	03/30/00	1100	MW-1	A/G	1/2 40mL	GW		X	7/1	92579	X	X								7 *
MW-2	03/30/00	1120	MW-2	A/G	1/2 40mL	GW		X	7/1	92580	X	X								7 *

* Adj pH w/ H_2SO_4 lot M0200.048

CONTAINER CODES:
A = Amber
B = Bag
G = Glass
P = Plastic
S = Summa Canister
O = Other V = VOA

MATRIX CODES:
GW = Ground Water
WW = Wastewater
DW = Drinking Water
SL = Sludge
S = Soil A = Air
O = Oil OT = Other

PRESERVATIVE CODES:
1 = HCl 7 = ICE
2 = HNO_3
3 = H_2SO_4
4 = $Na_2S_2O_3$
5 = NaOH
6 = MeOH

Relinquished By:	Date/Time	Received By:	Date/Time:
P.B. Aldrich	04/02/00 1500		4/3/00 10:30
Relinquished By:		Received By:	
Relinquished By:	4/3/00 15:09	Received By GeoLabs:	4/3 15:09

GEOLABS CHAIN OF CUSTODY